

Please type a plus sign (+) inside this box → +

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

Complete if Known

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

1

of

1

Application Number

10/810,948

Filing Date

March 25, 2004

First Named Inventor

Lakkis

Group Art Unit

To Be Assigned

Examiner Name

To Be Assigned

Attorney Docket Number

45389.00006.CIP

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
/LW/	AA	6,185,258		Alamouti, et al.	02-06-2001	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/LW/	AB	ALAMOUTI, Siavash M., "A Simple Transmit Diversity Technique for Wireless Communications" <i>IEEE Journal on Select Areas in Communications</i> , Vol. 16, No. 8, October 1998.	
/LW/	AC	WORNELL, Gregory W. and Mitchell D. Trott, "Efficient Signal Processing Techniques for Exploiting Transmit Antenna Diversity on Fading Channels" <i>IEEE Transactions on Signal Processing</i> , Vol. 45, No. 1, January 1997.	

Examiner
Signature

/Lawrence Williams/ (07/25/2007)

Date

Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation is not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

OCT 22 2004

Please type a plus sign (+) inside this box → +

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

**SUPPLEMENTAL INFORMATION
DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 3

Complete if Known

Application Number	10/810,948
Filing Date	March 25, 2004
First Named Inventor	Lakkis, Ismail
Group Art Unit	2631
Examiner Name	To Be Assigned
Attorney Docket Number	45389.00006.CIP1

U.S. PATENT DOCUMENTS

Examiner Initials ¹	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
/LW/	AD	5,109,390		Gilhousen et al.	04-28-1992	
	AE	5,563,909		Nakazawa	10-08-1996	
	AF	5,675,572		Hidejima et al.	10-07-1997	
	AG	5,680,419		Bottomley	10-21-1997	
	AH	5,949,813		Hunsinger et al.	10-07-1999	
	AI	6,049,707		Buer et al.	04-11-2000	
	AJ	6,192,068 B1		Fattouche et al.	02-20-2001	
	AK	6,215,814 B1		Ylitalo et al.	04-10-2001	
	AL	6,259,687 B1		Lomp et al.	07-10-2001	
	AM	6,320,897 B1		Fattouche et al.	11-20-2001	
	AN	6,526,090 B1		Papasakellariou	02-25-2003	
	AO	6,529,545 B2		Tirola et al.	03-04-2003	
/LW/	AP	RE37,802 E		Fattouche et al.	07-23-2002	

FOREIGN PATENT DOCUMENTS

Examiner Initials ¹	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ² (if known)				

NON PATENT LITERATURE DOCUMENTS

Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/LW/	AQ	BINGHAM, JOHN A.C. "Multicarrier Modulation for Data Transmission: An Idea Whose Time Has Come" IEEE Communications Magazine, May 1990, Pages 5-14.	
/LW/	AR	BLUM, RICK S. et al. "Improved Space - Time Coding for MIMO-OFDM Wireless Communications" IEEE Transactions on Communications, Vol. 49, No. 11, November 2001, pp. 1873-1878.	

Examiner Signature /Lawrence Williams/ (07/25/2007)

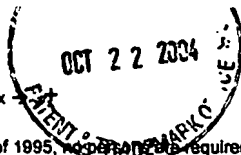
Date Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation is not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet **2** of **3**

Complete if Known

Application Number	10/810,948
Filing Date	March 25, 2004
First Named Inventor	Lakkis, Ismail
Group Art Unit	2631
Examiner Name	To be assigned
Attorney Docket Number	45389.00006.CIP1

NON PATENT LITERATURE DOCUMENTS

Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/LW/	AS	CHAUNG, JUSTIN et al. "Beyond 3G: Wideband Wireless Data Access Based on OFDM and Dynamic Packet Assignment" IEEE Communications Magazine, July 2000, pages 78-87.	
/LW/	AT	CRAMER, R. JEAN-MARC et al. "Impulse Radio Multipath Characteristics and Diversity Reception" IEEE 1998, pp. 1-5.	
/LW/	AU	EDFORS, OVE et al. "An introduction to orthogonal frequency-division multiplexing" September 1996, pp. 1-50	
/LW/	AV	ERTEL, RICHARD B. et al. "Overview of Spatial Channel Modes for Antenna Array Communication Systems" IEEE Personal Communications, February 1998, pp. 10-22.	
/LW/	AW	FOERSTER, JEFF et al. "Intel CFP Presentation for UWB PHY" IEEE P802.15 Working Group for Wireless Personal Area Networks, IEEE 802.15-03/109, March 03, 2003, pp. 1-53.	
/LW/	AX	KELLY, JOY "Multi-band OFDM Physical Layer Proposal Update" IEEE P802.15 Working Group for Wireless Personal Area Networks, IEEE 802.15-04/0122r4, March 15, 2004, pp. 1-26.	
/LW/	AY	LEEPER, DAVID G. "Wireless Data Blaster: Radio's oldest technology is providing a new way for portable electronics to transmit large quantities of data rapidly without wires" Scientific American, May 2002, Pages 64-69.	
/LW/	AZ	LE, I-TAI et al. "A Practical Implementation of Broadband Multiple Antenna Systems" 1999 IEEE, pp. 1-5.	
/LW/	BA	PATTAN, BRUNO "A Brief Exposure to Ultra-Wideband Signaling" Microwave Journal, December 2003, pages 1-5.	
/LW/	BB	VANDANAMEELE, PATRICK et al. "A Combined OFDM/SDMS Approach" IEEE Journal on Selected Areas in Communications, November 2000, pp. 1-27.	

Examiner
Signature

/Lawrence Williams/ (07/25/2007)

Date

Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation is not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 18 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box

OCT 22 2004

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

3

of

3

Complete If Known

Application Number	10/810,948
Filing Date	March 25, 2004
First Named Inventor	Lakkis, Ismail
Group Art Unit	2631
Examiner Name	To be assigned
Attorney Docket Number	45389.00006.CIP1

NON PATENT LITERATURE DOCUMENTS

Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/LW/	BC	WINTERS, JACK H. "On the Capacity of Radio Communication Systems with Diversity in a Rayleigh Fading Environment" IEEE Journal on Selected Areas in Communications Vol. SAC-2, No. 5, June 1987, pp. 871-878.	
/LW/	BD	WINTERS, JACK H. "Optimum Combining in Digital Mobile Radio with Cochannel Interference" IEEE Journal on Selected Areas in Communications, Vol. SAC-2, No. 4, July 1984, pp. 528-539.	
/LW/	BE	WINTERS, JACK H. "Smart Antenna for Wireless Systems" IEEE Personal Communications, February 1998, pp. 23-27.	
/LW/	BF	WINTERS, JACK H. "Optimum Combining for Indoor Radio Systems with Multiple Users" IEEE Transactions on Communications, Vol. COM-35, No. 11, November 1987, pp. 1222-1230.	
/LW/	BG	WONG, CHEONG YUI et al. "Multiuser OFDM with Adaptive Subcarrier, BIT, and Power Allocation" IEEE Journal on Selected Areas in Communications, Vol. 17, No. 10, October 1999, pp. 1747-1758.	
/LW/	BH	YE, ZHONG et al. "Throughput Analysis for a Packet Radio Network Using Rate Adaptive OFDM Signaling" IEEE International Conference on Communications, June 1999, pp. 1-7.	

Examiner
Signature

/Lawrence Williams/ (07/25/2007)

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation is not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.